

Gender Equality in Employment in Africa: Empirical Analysis and Policy Implications

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Abstract: Gender equality in employment is currently one of the greatest development challenges facing countries globally, including those in Africa. In 2011, the male employment-to-population ratio, globally, was estimated at about 72.7 per cent compared to the female employment-to-population ratio of only 47.9 per cent. For Africa as a whole, the male employment-to-population ratio was estimated at about 69.2 per cent compared to the female employment-to-population ratio of only 39.2 per cent. In addition to analysing the characteristics of gender equality in employment in Africa, this paper empirically studies the key drivers of gender equality in employment (proxied by the ratio of female employment rate to male employment rate for the age group 15–64 over the period, 1991 and 2009), using cross-sectional data. Our results suggest that for the all-Africa and sub-Saharan African samples, increased democracy (and its quadratic form), higher gross domestic investment, more primary education, and higher urban share of the population increase gender equality in employment while higher level of real GDP per capita, higher foreign direct investment, sex population ratio, and being a net oil-exporting country tend to lower it. However, North Africa is different. Apart from a negative and highly significant North African dummy in the overall results, the North African specific sample result indicates that while the quadratic element of real GDP per capita, higher gross domestic investment, higher urban share of the population, more secondary education, and being an oil-exporting country increase gender equality in employment, higher levels of real GDP per capita, more primary education, and sex population ratio tend to lower gender equality in employment in the sub-region. The policy implications and lessons of these results are discussed. These policies are directed at making the African labor market more inclusive and hence enhancing women's employment for the purpose of greater economic empowerment, household welfare and poverty reduction, in particular.

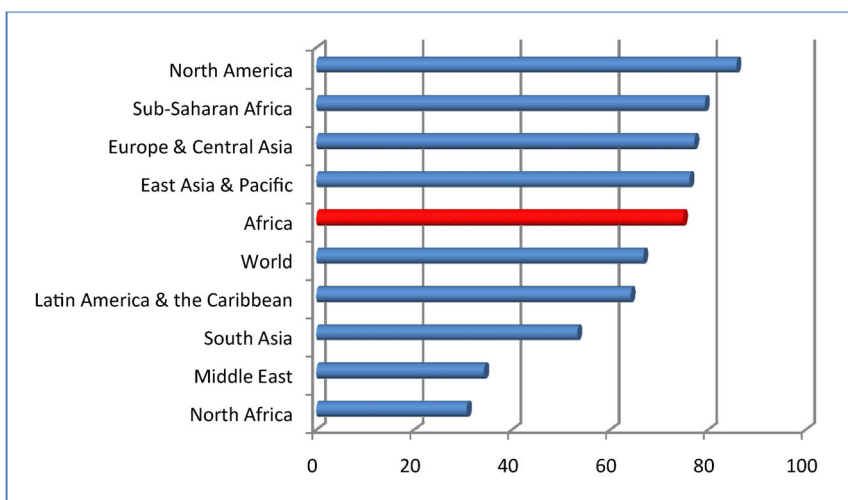
1. Introduction

Gender equality in employment is currently one of the greatest development challenges facing countries globally, including those in Africa. In 2011, the male employment-to-population ratio, globally, was estimated at about 72.7 per cent compared to the female employment-to-population ratio of only 47.9 per cent. For Africa as a whole, the male employment-to-population ratio was estimated at about 69.2 per cent compared to the female employment-to-population ratio of only 39.2 per cent. While estimates for sub-Saharan Africa stood at 70.4 per cent to 58.8 per cent, the data was much worse for North Africa. Women in North Africa faced an employment rate of only 19.6 per cent (compared to the global average of 47.9 per cent), the second lowest of all regions and sub-regions in the world — and against a figure of 68 per cent for the men in the sub-region during the same year. The social exclusion of women in employment in Africa (especially in North Africa) is acute, given that the unemployment issue was a key catalyst that triggered the Arab Spring ('revolution') in North Africa from January 2011, which had led to the fall of the governments in Tunisia, Egypt and Libya. It had also triggered a spate of socio-economic cum political reforms in the other countries in the sub-region. In addition, it creates an unnaturally high employment dependency ratio.

In addition to analysing the importance and characteristics of gender (in)equality in employment in Africa, this paper empirically studies the key drivers of gender equality in employment (proxied by the ratio of the female employment rate to male

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Figure 4: Gender equality in employment by region in 2010 (%)

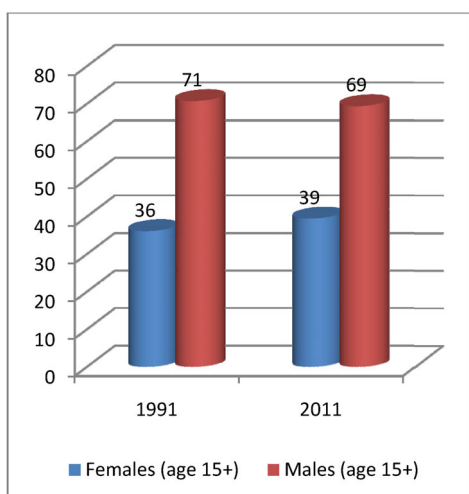


Sources: Authors, using data from ILO database, ILO (2012a).

In 2011, East Asia region had the highest average female employment ratio (at about 64 per cent) and highest gender equality in employment in the developing world at 75 per cent (Figures 3 and 4). While Africa’s female employment ratio was low at 39 per cent, that of sub-Saharan Africa was about 59 per cent. Africa’s performance was pulled down by North Africa’s average of only 19.5 per cent. With respect to gender equality in employment, Africa’s average in 2011 stood at 75 per cent, pulled up by the sub-Saharan Africa performance at 79 per cent — North Africa’s average was only 31 per cent (Figure 4).

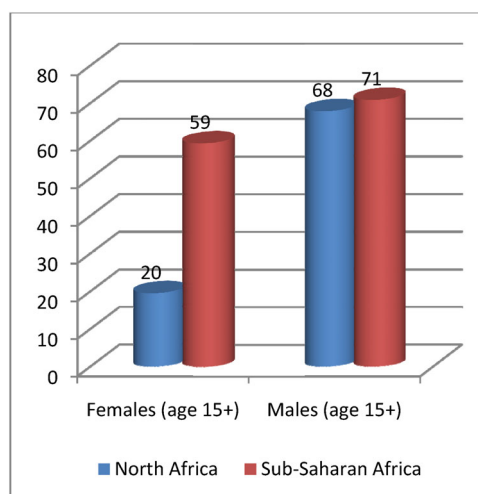
Figure 5 presents the average employment ratio for women and men in African countries in 1991 and 2011. It shows that employment was significantly lower for women. For the continent as a whole, women employment ratio stood at about 39 per cent, compared to 69 per cent for men (1.8 times higher than for women) in 2011. However, these average figures hide huge disparities between North Africa and sub-Saharan Africa (Figure 6). In addition, there is greater gender inequality in employment in North Africa than in sub-Saharan Africa, and this is true for all age groups (Figures 7 and 8).

Figure 5: Female and male employment ratios in Africa, 1991 and 2011



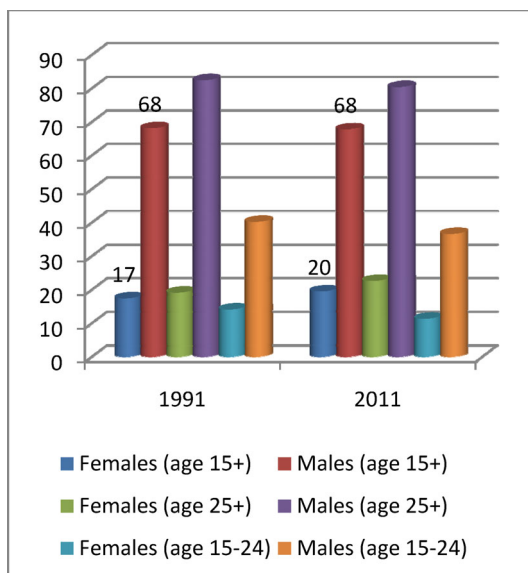
Source: Authors, using data from ILO database, ILO (2012b).

Figure 6: Female and male employment ratios in North Africa and Sub-Saharan Africa, 2011



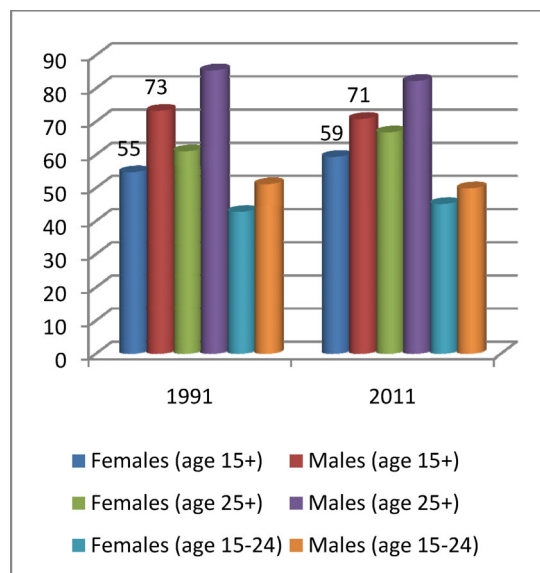
Source: Authors, using data from ILO database, ILO (2012b).

Figure 7: Female and male employment ratios in North Africa, 1991 and 2011



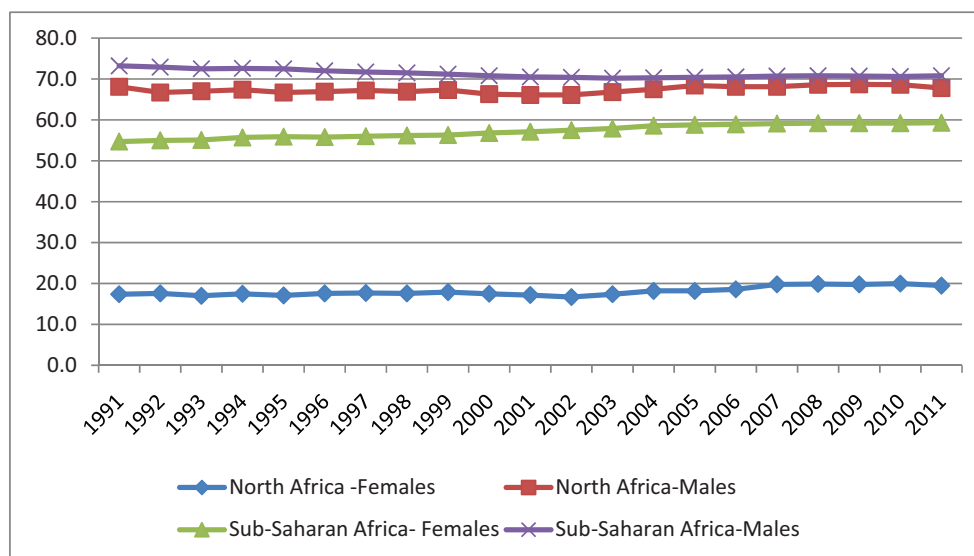
Source: Authors, using data from ILO database, ILO (2012a, b).

Figure 8: Female and male employment ratios in sub-Saharan Africa, 1991 and 2011



Source: Authors, using data from ILO database, ILO (2012a, b).

Figure 9: Female and male employment ratios by Africa’s major sub-regions, 1991–2011 (%)



Source: Authors, using data from ILO database, ILO (2012a).

As Figure 9 demonstrates, female employment-to-population ratio in North Africa is very low at an average of 18 per cent (against 57 per cent for males and global average) — and indeed by far the lowest throughout the period, 1991 to 2011 of world regions. This huge gender gap in employment in North African countries largely explains the generally low levels of employment ratios in the sub-region. For the African continent as a whole, the employment ratio averaged only 38 per cent for females against 45 per cent for the males between 1991 and 2011.

In 2011, the female employment ratio in North Africa was only 20 per cent compared to 68 per cent for men with respect to all ages. During the same year, in sub-Saharan Africa, the female employment ratio was 59 per cent against 71 per cent for men.

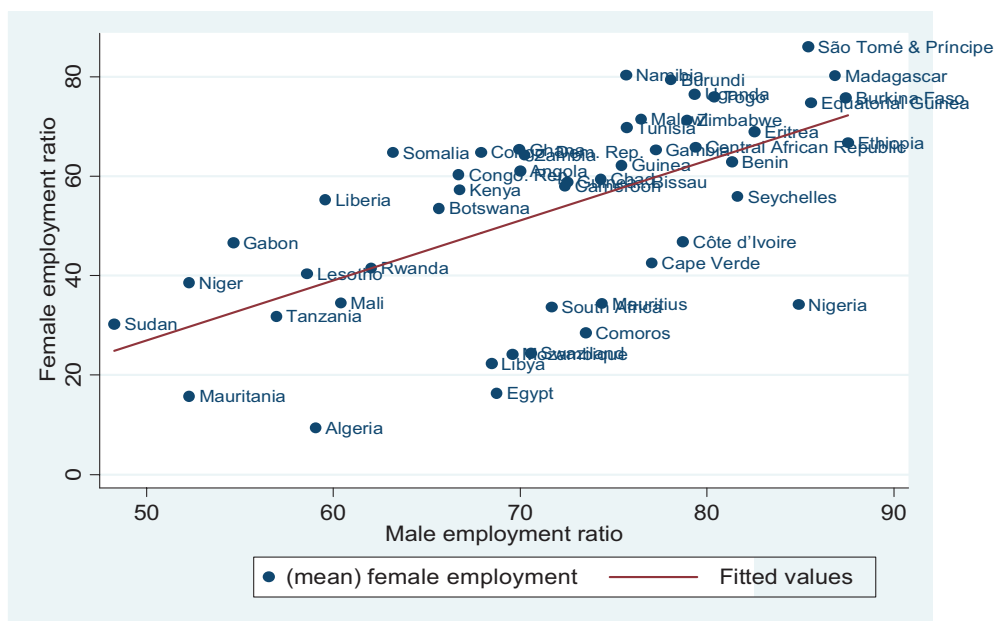
2.1 Substantial Variation in Female Employment Ratio across African Countries

There are substantial variations in the female employment ratio across African countries as can be seen in Figure 10, which shows average female and male employment ratios between 1991 and 2011. It shows that a number of smaller African economies have relatively higher female employment ratios compared to richer, oil-exporting and North African economies, which languish at the bottom. In the continent, high male employment is associated with high female employment and more gender equity in employment (Figure 10). Figure 11 confirms that there was a positive relationship between male and female employment ratios, demonstrating that countries with the largest male employment ratios tended to also have the highest gender equality in employment. Thus, while African women tend to be particularly vulnerable to labor market rationing, they could also greatly benefit from overall expansion of employment opportunities.

Female employment has grown since 1991, dramatically in some countries. Expanding economic opportunities have drawn large numbers of new female workers into the market. Consequently, between 1991 and 2010, for example, the average gender equality increased from 70 per cent to 76 per cent. As can be seen from Figure 12, gender equality rose in many African countries between 1991 and 2010.

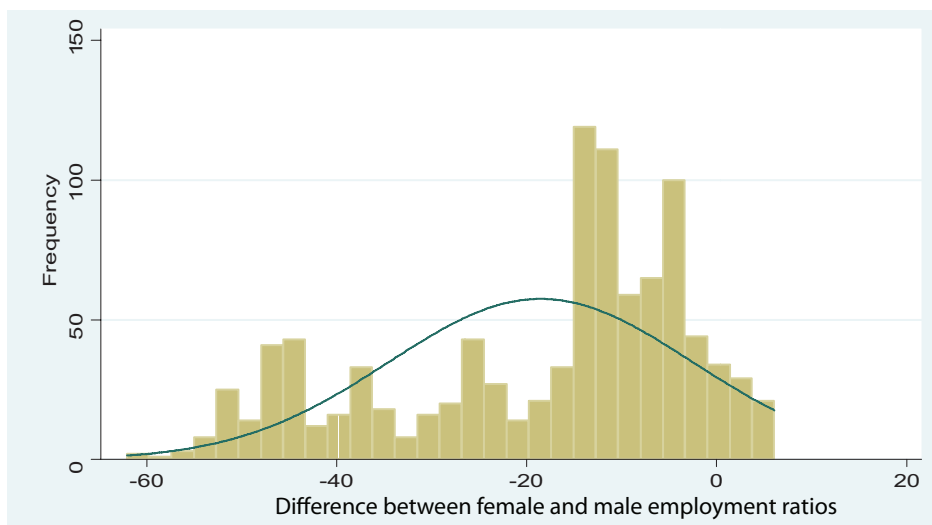
Overall, however, substantial gender inequality exists in African countries. As shown in the distribution of the difference between average female employment ratio and male employment ratio between 1991 and 2011, the gap between the two is not symmetrical but negatively distributed, indicating gendered social exclusion (Figure 13).

Figure 10: Relationship between average female and male employment ratios, 1991–2011



Source: Authors, using data from ILO database, ILO (2012a).

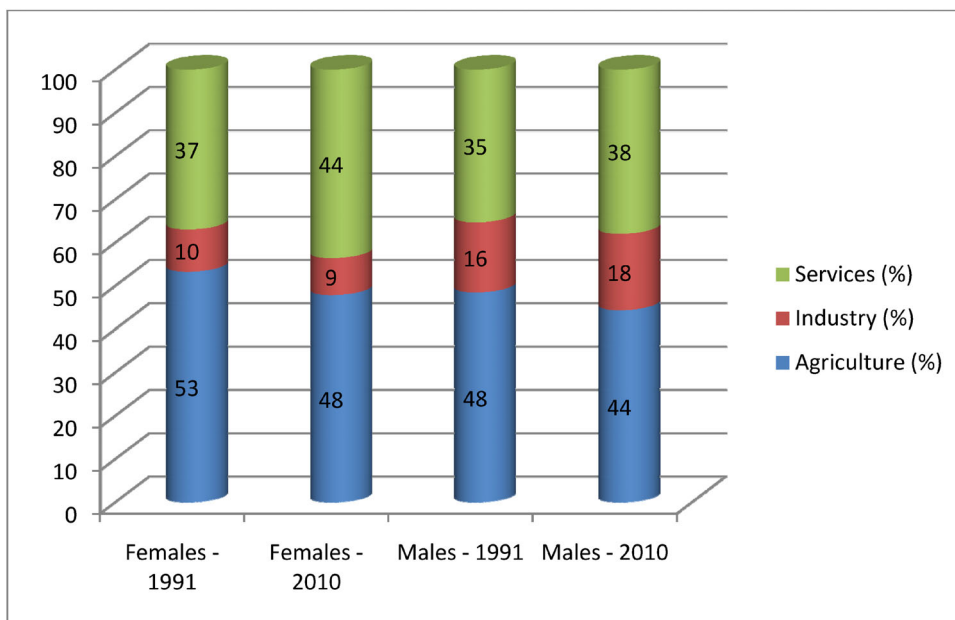
Figure 13: Distribution of average female minus male employment ratios, 1991 and 2011



Source: Authors, using data from ILO database, ILO (2012a).

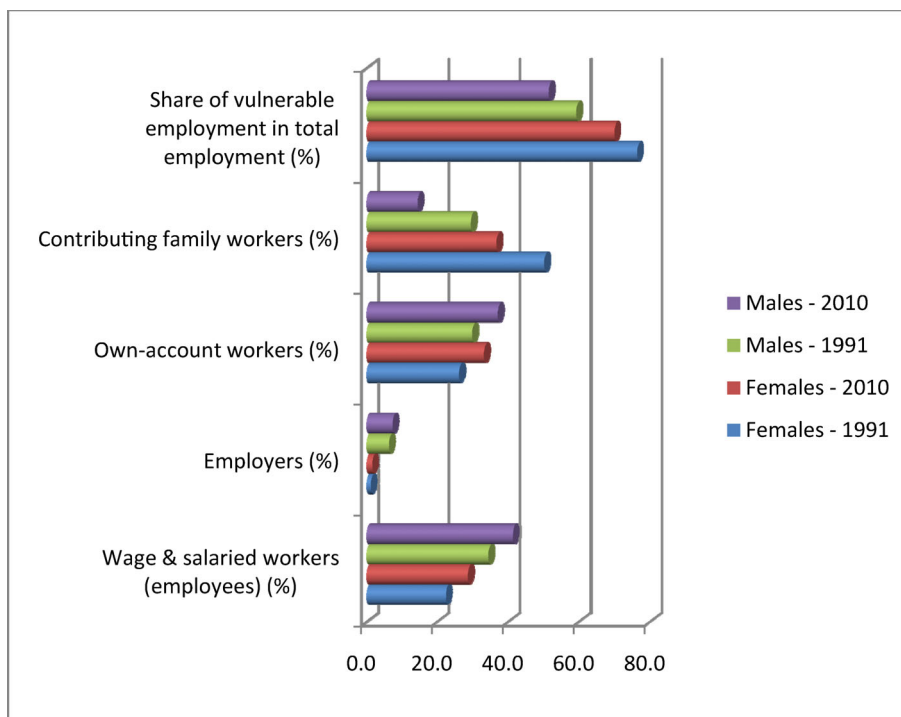
Figure 15 shows that in 2010, about 40 per cent of male workers and less than a third of female workers engaged in regular wage and salaried employment in Africa, a strong indication of weak labor market institutions and a large informal economy. Less than 2 per cent of all women workers in Africa were running their own business with paid employees, indicating that the entrepreneurial capabilities of African women are far from being tapped. In addition, the figure shows that non-paid work in a

Figure 14: Employment sectoral composition by gender in Africa, 1991 and 2010



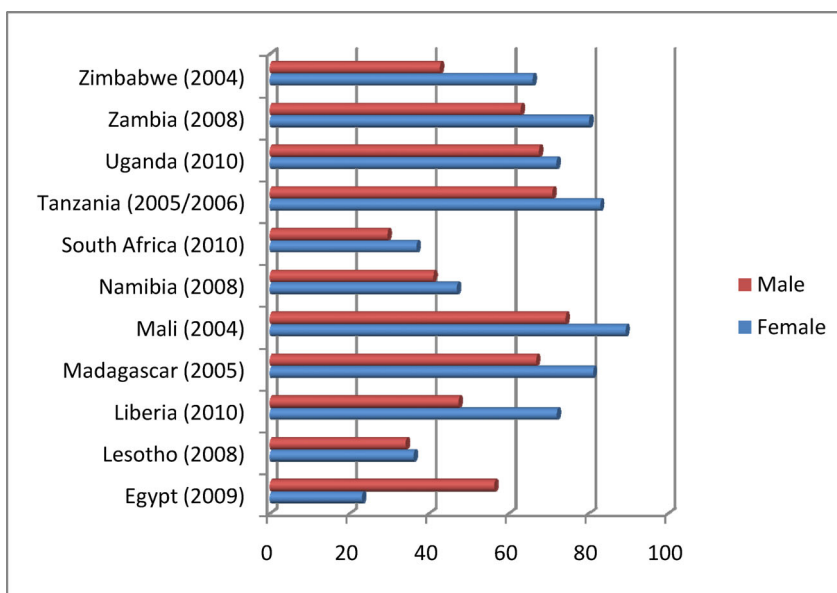
Source: Authors, using data from ILO databases.

Figure 15: Status in employment in Africa by gender, 1991 and 2010

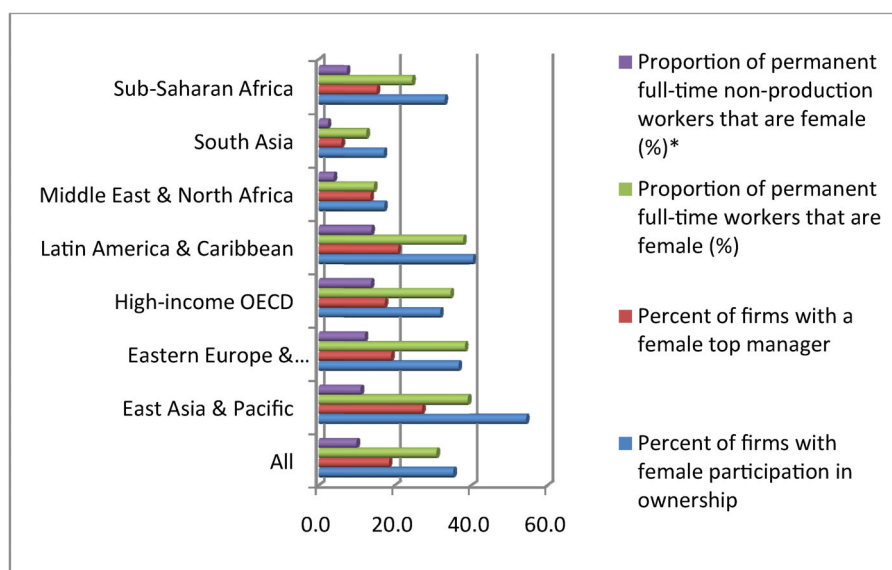


Source: Authors, using data from ILO databases.

Figure 16: Informal employment in non-agricultural activities by gender, latest available year



Source: Authors, using data from ILO databases.

Figure 17: Proportion of women in firm management, ownership and work

* Data from manufacturing forms only.

Source: Authors, using data from World Bank Enterprise Surveys database, 2012.

family establishment is very much a female domain while men dominate the own-account (self-employment with no employees) and employer statuses.

We note that ‘contributing family workers’ and ‘own-account workers’ are classified as ‘vulnerable employment’ in the employment-related target for MDG1 to eradicate poverty and hunger through ‘full and decent employment for all, including women and young people’. As Figure 15 confirms, not only did vulnerable employment account for more than half of total employment but also its share was higher for women (about 70 per cent) than men (about 51 per cent) in Africa.

With the exception of Egypt among African countries for which data is available, the proportion of women in informal non-agricultural employment is larger than the proportion of men (Figure 16). Unfortunately, informal employment is closely linked to low earnings, poor quality jobs and poverty.

In addition, enterprise survey data suggest that female employees (especially permanent full-time), female-owned and run enterprises are smaller than those for males (Figure 17).

3. The Review of the Literature

The literature suggests that the key factors affecting gender equality in employment relate to the level/stage of economic development, globalization, demographic factors, macroeconomic factors, infrastructure availability, education, cultural and social norms, perceptions and expectations, and political systems.

There is evidence that, as countries develop, female labor force participation, for example, displays a U-shaped trajectory. A number of hypotheses have been put forward as to why female labor force participation first falls before rising with economic development levels. Boserup (1970) suggests that men’s greater access to education and technologies implies that they displace women from the labor force during the early stages of a country’s development. As development continues and women gain more access to education and technologies, female labor force participation increases. Another well-established hypothesis for this phenomenon focuses on income and substitution effects. As development occurs, households’ unearned incomes rise, reducing the incentive of women to work outside the home. The negative impact of rising incomes on women’s labor force participation is termed the ‘income effect’, since greater household income implies that households are able to afford more female leisure time. On the other hand, the substitution effect works in the opposite direction — as female wages rise, more women have the incentive to enter the labor market (Goldin, 1995; Mammen and Paxson, 2000; Bloom *et al.*, 2009; Chaudhuri, 2009; Tam, 2011).

Eastin and Prakash (2013) find a curvilinear relationship between economic development and gender inequality ('S shaped'), with three distinct stages. In the first stage, economic development improves gender equality because it enables greater female labor force participation. In the second stage, labor force stratification and gender discrimination encourage divergent male/female income trajectories, which decreases opportunity costs of female labor force withdrawal and lends credence to social resistance against rising gender norms. As a result, there is a decline in initial equality gains. In the final stage, gender equality again improves as greater educational participation and technological advancement provide new employment opportunities for women, increase opportunity costs of staying home, and encourage the evolution of new social institutions and norms that overcome prior discriminatory practices.

The pattern of female employment ratio in Africa partly reflects the natural resource endowment structure, whereby female employment ratio is lowest in fossil fuel-rich economies. For example, Algeria, Egypt and Libya have very low employment ratios relative to their income levels. This pattern tends to conform with the often analysed 'cultural effect' in Muslim-dominated countries where female employment is considered socially and culturally acceptable as long as it does not interfere with women's primary role as wives and mothers given the notion, belief and persistent stereotypes that motherhood and childcare represent a 'woman's true vocation' (Blackburn, 2004; Stivens, 2006). As the case of Tunisia, however, demonstrates, legislation can codify social norms and 'gendered beliefs' into gender-equalizing labor practices.

Recent empirical work finds that globalization can improve gender equality because foreign direct investment (FDI) and international trade can generate employment opportunities for women (Richards and Gelleny, 2007). According to Oostendorp (2009), inflows of foreign capital to local markets are held to have positive effects on gender equality as multinational corporations (MNCs) frequently provide women with employment outside of the home — often in countries where these opportunities would not have existed in its absence. However, in the long term, FDI may make women more likely to either lose their jobs to men or be pushed down the production chain into subcontracting work. Furthermore, FDI may further widen the gender gap as technical training is mostly offered primarily to men, thereby 'improving male technical knowledge and reducing women's access to technology and employment' (Parpart *et al.*, 2000). Also, foreign investment could have a disproportional adverse effect on women if it serves to reinforce existing gender inequalities (Ward, 1984; see also Ernesto, 2011).

However, economic integration can solidify gendered occupational segregation, which forces women into poorly paid jobs. At the same time, policies designed to increase trade and FDI inflows reduce state revenue, and therefore reduce the government's capacity to provide social services. Because women are often the key beneficiaries of these services, economic integration can undermine gender equality in many dimensions.

In a recent study, Tseloni *et al.* (2011) found that a relatively greater participation of women in paid employment is evidenced in more populous countries, with a greater share of women in their populations, more equal income distribution, and higher growth rates, but lower level of economic development, democracy ratings or international capital mobility (i.e., current account surplus or deficit/GDP). Also, declines in fertility have been found to exert a large positive effect on the labor force participation rate across the world (Bloom *et al.*, 2009).

As Sakellariou (2011) has explained, changes in educational attainment, the demographic profile of the population, explain changes in the female-male gap in labor force participation, especially in rural communities. Changes in education and literacy contribute to the explanation of variation in female labor force participation within a country (Ogawa and Akter, 2007; World Bank, 2010; Gallaway and Bernasek, 2004).

Recent findings by Cipollone *et al.* (2012) show that an increasing (positive) effect of the level of education and a diminishing (negative) effect of fertility choices play an important role in explaining women's participation in the labor market, with important differences across EU countries characterized by different institutional and welfare settings.

Campa *et al.* (2011) analyse the extent gender culture affects the gender gap in employment. They show that the index of gender culture based on firms' attitudes as well as female literacy and education are significant in explaining the gender gap in employment in Italian provinces. As Forsythe *et al.* (2000), have noted, with respect to the effect of culture, 'rapid development is particularly likely to be accompanied by greater gender rigidity in a country with a tradition of patriarchal institutional arrangements'. Indeed, Boserup (1970), Moghadam (1994), Shukri (1996), Psacharopoulos and Tzannatos (1989) have found that Muslim and Latin American countries — countries with strong socio-religious views about women's role in the public sphere and the workplace — are more likely to be characterized by entrenched patriarchal institutions (see also Antecol, 2000; Fernández, 2010; Fernández and Fogli, 2005; Fernández *et al.*, 2004).

In addition, the inter-state conflict literature, such as the seminal work by Hegre *et al.* (2001) supports a quadratic relationship between democracy and gender equality. Democracy could unleash women's labor market potential and open up the decision-making process to the less privileged, including women, resulting in redistributive policies benefitting these groups. Democracy could also reduce gender inequality by increasing expenditures on social programmes.

4. The Model and Data

This section focuses on the econometric analyses of the determinants of gender equality in employment in Africa. We use the cross-sectional time series data covering 48 African countries to empirically study the key drivers of gender equality in employment in the continent, during the period, 1991 to 2009. The variable that proxies gender equality in employment (the ratio of the female to male employment for the age group 15–64 over the period (in percentage) was used as the dependent variable. This indicator of gender equality reflects the gender gap in employment opportunities. Increasing values in the indicator indicate increasing levels of gender equality. The level of economic development along with other control variables, acted as independent variables.

4.1 Independent Variables

Level of Economic Development

To control for the level of economic development, we include a nation's real gross domestic product (GDP) per capita measured in terms of constant 2000 dollars. We also include the square of real GDP per capita in order to determine whether a non-monotonic relationship exists between development and gender equality in employment. The quadratic term tests Boserup's (1970) assertion that the gap between men and women increases at intermediate levels of economic development but subsequently narrows after a nation has achieved a certain level of economic development.

Institutionalized Democracy

It has been hypothesized that democracy increases equity in gender relations as women become empowered through the political process. This is because it is assumed that democratic regimes have greater respect for human rights, including women's rights, relative to authoritarian regimes. We use the measure democracy from the Polity IV Project, in which a country's level of democracy is ranked along a 21-point spectrum, ranging from -10 for fully institutionalized autocracies to $+10$ for fully institutionalized democracies, based on research done at the Center for International Development and Conflict Management, University of Maryland. Since it is intuitively plausible that democratic countries encourage female employment, we expect that increasing levels of democracy act to increase gender equality in employment. Democracy is fitted as a quadratic function for capturing possible average across country non-linear effects.

Domestic Investment

A key macroeconomic indicator is used: domestic investment rate. The higher the value of investment rate, the more resources a government ostensibly has at its disposal to spend on economic and social programmes, including investments for employment creation.

Demographic Factors

To measure the effect of key demographic variables on gender equality in employment, two indicators are used: ratio of female to male population of those 15 years to 64, and the share of urban areas to total population. Inclusion of the sex population ratio ensures that changes in the population ratio due to changes in the sex population ratio are properly accounted for. In light of the above, the youth sex ratio is expected to have a positive effect on the student ratio. More specifically, increases in the youth sex ratio are expected to lead to increases in the student ratio. Thus, the higher the proportion of women in a nation's population, the higher will be the gender equality in employment. On the other hand, living in an urban area is associated with an increase in access to labor markets and formal employment opportunities. Women, like their male counterparts, have access to more economic opportunities in urban areas than in rural areas. This is because urban labor markets offer a wide variety of occupations, from manufacturing and services to clerical activities. Thus, an increased urbanization rate is expected to lead to higher levels of gender equality in employment.

Foreign Direct Investment

In order to control for the effect of globalization on gender equality in employment, foreign direct investment (FDI) is included as the explanatory variable and it is measured as a percentage of GDP. As authors like Oostendorp (2009) have argued, FDI is assumed to be positively associated with gender equality in employment. On the other hand, other authors have argued that FDI can have a negative effect on gender equality by serving to reinforce existing gender inequalities in access to the labor market and the gender division of labor. Indeed, in predominantly agricultural nations of Africa, men have a greater advantage in producing export crops, compared with women who predominately produce crops for subsistence and local consumption hence the greater access to export channels through FDI would further widen the gender gap. Many African countries are today blessed with abundant natural resources, which have been attracting huge FDI. Unfortunately, most natural resources sectors such as minerals, are enclave and capital-intensive sectors, and operate to the advantage of men, thus widening the gender gap in employment.

Education

Education tends to broaden one's views, reduce ethnocentricity, and thus increase one's flexibility of accepting new customs and norms. As such, the level of education attained by the general population plays an important role in increasing acceptance of the concept of gender equality. Indeed, women with higher levels of education are more likely to enter the labor market, especially in urban areas, which may reflect their higher wage premiums and higher opportunity cost of being inactive (Ogawa and Akter, 2007; World Bank, 2010a). We use both gross primary and secondary education enrolment rates to determine their gender equality promotion effects.

Year Effects, Sub-regional Effects and Oil Effects

We include years and the five sub-regional dummies to capture year and sub-regional effects. In addition, to capture the effects of net oil exporters, we add two dummies representing net oil exporters and net oil importers.

4.2 The Model

Based on the above review and following the frameworks posited by Chen (2004), Tseloni *et al.* (2011), Eastin and Prakash (2013) and Anyanwu (2012, 2013), the relationship that we want to estimate can be written as:

$$\log GE_{it} = \alpha_i + \beta_1 \log(\text{rgdp}_{it}) + \beta_2 \log(\text{rgdp}_{it}^2) + \beta_3(\text{democ}_{it}) + \beta_4(\text{democ}_{it}^2) + \beta_5(X_{it}) + \beta_6(Z_{it}) + \varepsilon_{it} \quad (1)$$

$(i = 1, \dots, N; t = 1, \dots, T)$

where GE is the measure of gender equality in country i at time t ; α_i is a fixed effect reflecting time differences between countries; β_1 is the elasticity of gender equality with respect to real per capita income in 2000, rgdp ; β_2 is the gender equality elasticity with

Table 1: Descriptive statistics of main regression variables (excluding dummies), 1991–2009

Variable	Observations	Mean	Standard deviation
Gender equality in employment	950	70.84	20.85
Real GDP per capita	960	1065.43	1573.73
Democracy	916	-3.57	23.17
Domestic investment-GDP	950	20.78	11.13
FDI-GDP	962	3.88	9.45
Primary education	817	89.96	27.87
Secondary education	623	36.72	26.36
Urban population share	1007	38.23	17.31
Sex population ratio	988	1.03	0.06

Note: These are raw data before the log and other transformations.

Source: Authors' calculations.

respect to quadratic real per capita GDP; β_3 is the coefficient of democracy, *domec*; β_4 is the coefficient of the quadratic of democracy; X is the control variables, including domestic investment (percentage of GDP) (*inv*), foreign direct investment (percentage of GDP) (*fdi*), primary school enrolment ratio (*primed*), secondary school enrolment ratio (*secedu*), urban population share (*urban*), and sex population ratio (*popratio*); Z represents year, sub-regional and oil effects dummies used as fixed effects; and ε is an error term that includes errors in the gender equality measure. We use the North African dummy with its separate estimation to check if, indeed, North Africa is different.

Data for these variables are largely drawn from the World Bank's WDI Online database, except as indicated in the Appendix. OLS regressions with year, sub-regional, and oil fixed-effects were estimated to investigate the determinants of gender equality in employment. Table 1 provides detailed descriptions of the raw dataset.

5. Model Estimation Results and Analysis

Table 2 presents the results of estimating the gender equality in employment Equation 1.

5.1 Level of Economic Development

In our results, the coefficient associated with real GDP per capita is found to be negative and statistically significant in both the overall Africa sample and in the sub-Saharan and North African samples. To test the hypothesis that real GDP per capita has a non-monotonic relationship with gender equality in employment, the squared real GDP per capita is included as an explanatory variable. The quadratic term is positive in sign and significant at the 1 per cent level in North Africa and not in the other samples. The North African result provides evidence of U-shaped relationship between real GDP per capita and gender equality in employment. Thus, this result suggests that although higher levels of real GDP per capita are negatively associated with gender equality in employment, the effect is not constant. Rather, for levels of real GDP per capita above a certain point, higher levels of real GDP per capita act to increase gender equality in employment in North Africa, holding other factors constant. This relationship suggests that the marginal effect of real GDP per capita exhibits increasing returns for gender equality in employment in North Africa. Thus, this finding supports Boserup's (1970) assertion that the curvilinear relationship between economic development and gender equality is U-shaped. However, this U-shaped relationship contradicts the findings of Chen (2004), Tseloni *et al.* (2011), and Eastin and Prakash (2013).

5.2 Institutionalized Democracy

Institutionalized democracy is positive and statistically significant for the overall Africa and sub-Saharan African samples (but not in North Africa), confirming earlier findings such as those of Tseloni *et al.* (2011), and Eastin and Prakash (2013). The quadratic term included to determine whether democracy has a non-linear effect on gender equality employment is also positive in sign and statistically significant in overall African and sub-Saharan African samples, indicating a positive accelerated relationship between democracy and gender equality in employment, holding other factors constant.

5.3 Domestic Investment

As shown in Table 2, a nation's domestic investment rate is found to be positively and significantly associated with gender equality in employment in the overall Africa, sub-Saharan African and North African estimations. This shows that domestic investment matters for gender equality in employment in Africa.

5.4 Foreign Direct Investment

The FDI-GDP ratio had a negative and statistically significant effect on gender equality in employment, except in the case of North Africa where the sign is positive but insignificant. Our results, therefore, do not support the proposition that the inflow of foreign direct investment enhances gender equality in employment.

Table 2: Ordinary least squares estimates of the determinants of gender equality (with sub-regional and oil fixed effects)

Variable	Africa	Sub-Saharan Africa	North Africa
Real GDP per capita	-7.719 (2.54**)	-6.045 (-4.84***)	-149.161 (-4.98***)
Real GDP per capita ²			8.234 (4.50***)
Democracy	0.754 (4.59***)	0.931 (5.36***)	-0.016 (-0.09)
Democracy ²	0.010 (4.85***)	0.012 (5.62***)	
Domestic investment-GDP	0.187 (2.54**)	0.172 (2.21**)	0.277 (4.51***)
FDI-GDP	-0.273 (-2.17**)	-0.212 (-1.61*)	0.084 (90.52)
Primary education	0.169 (6.19***)	0.169 (5.93***)	-0.158 (-6.84***)
Secondary education	-0.335 (-6.93***)	-0.491 (-8.63***)	0.096 (3.57***)
Urban population share	0.342 (4.56***)	0.425 (5.38***)	0.488 (5.94***)
Sex population ratio	-89.663 (-7.77***)	-85.462 (-7.13***)	-13.458 (-1.37)
Net oil exporters	-11.105 (-6.76***)	-16.261 (9-8.56***)	7.979 (5.10***)
Net oil importers			
North Africa	-24.277 (10.71***)		
Southern Africa	39.240 (15.76***)	9.688 (4.84***)	
Central Africa	30.057 (11.58***)	2.583 (1.00)	
East Africa	28.568 (11.66***)		
West Africa		-4.969 (-2.73**)	
Constant	170.923 (11.68***)	178.655 (11.74***)	675.840 (5.76***)
Year fixed effects	Yes	Yes	Yes
R-squared	0.6954	0.5091	0.9687
Adjusted R-squared	0.6742	0.4710	0.9413
F-statistic	32.75	13.35	35.33
Prob > F	0.0000	0.0000	0.0000
N	492	431	61

Note: *t*-values are in parentheses; ***1% significant level; **5% significant level; *10% significant level.

Source: Authors' estimations.

5.5 Education

Not all levels of education are 'created equal' for gender equality in employment in African countries — and this is different for sub-Saharan Africa and North Africa. According to our results, primary education is positively and significantly related to gender equality in employment in the overall Africa and sub-Saharan Africa estimations but negatively significant in the North Africa

results. It is only when people have at least secondary education that the relationship between education and gender equality in employment in the overall Africa and sub-Saharan Africa results becomes significantly negative. However, in North Africa, at least a secondary education has a gender-equalizing employment effect — also a reflection of higher secondary enrolment in North Africa than in sub-Saharan Africa: 65.82 percent against only 33.33 percent — almost double.

In North Africa, therefore, secondary and higher education are more relevant for gender equality in employment than primary education as they strengthen and build upon knowledge begun in the primary levels, and provide essential skills for the labor market. Therefore, secondary level education may serve as a threshold level for education for gender equality in employment in North Africa. This may not be surprising since secondary school enrolment is a commonly used indicator of the capability of the workforce (see also Tilak, 2007). Consistent with Chen (2004), this supports the hypothesis that education tends to broaden one's awareness of cultures and social norms that exist in industrial countries where women are in most circumstances entitled to the same freedoms and opportunities as extended to men. Thus, for North African countries, education beyond primary level is good for gender equality in employment but this has to be based on the acquisition of relevant and world of work skills through technical and vocational education and training (TVET) so as to avoid an 'army' of unemployed graduates.

5.6 Demographic Factors

Increasing urbanization rates are found to be positively and significantly associated with increasing gender equality in employment in all-Africa, sub-Saharan Africa and North Africa estimations. As seen in Table 2, this effect is statistically significant at the 1 per cent level in all the estimations.

The ratio of female to male population has a negative and highly statistical significant effect on gender equality in employment in all-Africa data and the sub-Saharan Africa sample. Thus, the higher the proportion of women in a nation's total population, the lesser the level of gender equality in employment in that country.

5.7 Sub-regional and Oil Effects

The sub-regional fixed effects, which shift the intercepts, imply that North African countries (with the exception of Tunisia), followed by those in West Africa, systematically have more gender inequality in employment compared to the rest of the continent while sub-Saharan Africa shows less female exclusion but more female employment. This lends credence to the assertion that North Africa is indeed different.

Our results also show that net oil exporting countries in sub-Saharan Africa generally have more gender inequality in employment compared to net oil-importing countries. This result suggests that, holding other factors constant, net oil-exporting countries in sub-Saharan Africa experience higher levels of gender inequality in employment than net oil-importing countries. In this sense, our results lend support to the hypothesis advanced by Inglehart (1997) and Ross (2008) that oil-exporting nations tend to increase gender inequality by excluding women from the formal economy. However, the results for North Africa indicate that oil-exporting in that sub-region enhances gender equality in employment.

6. Conclusion and Policy Recommendations

Our empirical estimates, using available cross-sectional data over the period, 1991 and 2009, suggest that for all-Africa and sub-Saharan African samples, increased democracy (and its quadratic form), higher gross domestic investment, more primary education, and higher urban share of the population increase gender equality in employment while higher level of real GDP per capita, higher foreign direct investment, sex population ratio, and being a net oil-exporting country tend to lower it.

However, North Africa is different. Apart from a negative and highly significant North African dummy in the overall results, the North African specific sample result indicates that while the quadratic element of real GDP per capita, higher gross domestic investment, higher urban share of the population, more secondary education, and being an oil-exporting country increase gender equality in employment, higher levels of real GDP per capita, more primary education, and sex population ratio tend to lower gender equality in employment in the sub-region.

What are the implications of these results for African countries? Given our finding that domestic investment increases gender equity in employment in African countries, achieving higher domestic investment must remain as an active goal of governments.

A key challenge for African countries, therefore, is to mobilize increased resources for such high domestic investment. Successful promotion of investment in Africa will require actions and measures at the national and regional levels: First, at the national level, apart from continuing to deepen the reforms (macroeconomic and institutional) that they have embarked on in the last decade, African countries need to increase efforts at the mobilization of higher domestic savings, including through the implementation of tax reforms, cost sharing in the provision of public goods and services and enhancing public expenditure productivity. Tax reforms should focus on broadening the tax base, emphasizing indirect taxes/value added tax (VAT) (and hence keeping marginal and average income tax rates low), raising tax elasticity with respect to economic growth, reducing exemptions, simplifying and improving tax administration, especially developing more efficient and effective tax collection systems. Further efforts should also be made to improve the efficiency and effectiveness of public institutions, if these are to serve as genuine partners for the private sector. Sustainable domestic investment also needs increased human capital investment to enhance the health and welfare of populations and generate the skills required in a competitive global environment.

The current study suggests that, holding other factors constant, increasing levels of FDI are associated with decreasing gender equality. Thus, to promote gender equality and, in turn, to ensure women have complete access to productive resources, African countries should regulate the inflow of foreign capital to ensure labor-intensive industries are not displaced by globalization. Further, to protect against threats to individual basic rights, the government should mandate that MNCs adhere to core labor standards, as provided by the International Labor Organization (ILO). Since labor-intensive employment represents a viable channel through which women are able to realize gains in real wages and social capital, the protection of these industries should be a policy priority for African countries.

African governments should start encouraging entrepreneurship and access to financing, especially for the women (and men). The continent needs entrepreneurs ready and able to explore new opportunities. Women need training in entrepreneurship and to be encouraged to take risks and start businesses and subsequently become employers themselves (WEF, 2012a, b).

Effective policies that invest in human capital of the workforce are needed. Policies that promote the up-skilling, better training and education for the low-skilled workforce are imperative. Both the up-skilling, labor market training, educational reforms that conform to industry needs will also help address the skills mismatches existing in many African countries.

Since unemployment benefits, social protection and employment protection are part of the core ILO labor conventions that member states have ratified, it is imperative that these conventions are being upheld by countries in African countries. Countries that do not have proper social insurance systems need to enact innovative policies and strengthen labor legislation. Governments need also to foster inclusive societies and working environments, enforcing anti-discrimination laws and supporting equal opportunities and empowering women in the labor market.

African governments need to dialogue with large employers in creating employment for the women (and men) through strategic skills planning, skills development and skills matching. Addressing the skills mismatch in the short run will require improved training programmes and closer links between tertiary and vocational educational institutions on the one hand, and the private sector on the other. Training programmes should include on-the-job initiatives targeting those already working, as well as graduates with a general education who lack specific work skills. In addition, governments need to develop innovative public-private partnerships and the opportunities for collaboration among large employers, governments and other relevant stakeholders such as higher and vocational educational institutions to transform institutional structures and strengthen the region's economy (Ncube and Anyanwu, 2012).

Indeed, stronger university-industry linkages are essential. This can be done by including private sector representatives in national education and training policy bodies and on academic boards involved in curriculum development. No doubt this will also facilitate private sector funding for research, scholarships, internships and apprenticeships.

Our results also point to governmental efforts in not just increased human capital, especially for the women, but more importantly reforming the educational curriculum for better quality education and skills. Other measures include targeted government expenditure on women in addition to introducing legislations and enacting the right fiscal policies and investment climates to increasingly formalize the informal sector.

The literature has identified a number of possible policy instruments to deal with inequality of all forms, including guaranteed employment schemes, labor market training, greater access to health, nutrition and education through increased social investments, affirmative action, and land and property rights reforms, especially to benefit rural dwellers (particularly women). Improving access to education, for example, can reduce inequality both by increasing individual productivity and by facilitating the movement of poor people from low-paying jobs in agriculture to higher-paying jobs in industry and services. More importantly, public spending on education (as well as on health and other human capacity), when targeted at women, especially the poor, can produce a double dividend, reducing gender inequality in employment in the short run and increasing the chances for

women to access formal jobs and thus break free from the poverty trap. Increasing educational levels (and its quality) should be accompanied by a strong investment climate to ensure that productive jobs are created for the newly educated men and women.

Policies to transfer cultural/social norms and practices, especially in North African countries, are essential. In particular, the process of rapid urbanization in North African nations that is currently underway brings with it the possibility of newly defined roles for men and women, as traditional social norms and production relations become more relaxed and new parameters regarding appropriate forms of behavior are formed. The education system should also be used as an important means to change gender inequality and promoting social norms from a young age. Indeed, the integration of gender equality principles into the school and professional curricula can tackle the value system of children early on and challenge discriminatory social norms. In addition, promoting women's voice and participation in public settings and increased information obtained from exposure to enlightened television programming also play a critical role in changing social norms.

We have shown in this study that being a net oil exporting country in sub-Saharan Africa promotes gender inequality in employment. Thus, efficient management of oil and other natural resources in Africa requires actions throughout the value chain. In particular, a new natural resources management framework is needed for better governance, sectoral linkages, economic growth and human, capacity and infrastructure development — with strong parliamentary legislation, oversight and representation throughout the resources value chain.

Key effective natural resource management practices will require the following measures:

- Enhanced good governance, especially as it relates to the way public money is spent, is a crucial factor in turning a natural resource boom into an opportunity for growth and development, job creation, and gender equality in Africa. Prioritizing a public investment management system is imperative. Checks and balances need to be maximized through parliaments.
- Integrating the extractive sector into national development frameworks — revenue optimization needs to be integrated with the downstream sector. Value-addition and natural resource-industry linkages are paramount.
- Reinforcing institutional capacity and building strong and capable institutions.
- Sound fiscal policy and diversification of economy while using windfall taxes to protect against renegeing on taxation.
- There has to be full disclosure of terms of natural resources contracts and activating third-party brokers such as development partners (e.g. African Development Bank) and NGOs to ease information availability and reduce information asymmetry.
- African natural resource-rich countries should stop the practice of entering into bilateral development agreements with extractive companies for generous concessions in extraction contracts. Consequently, all contracts and terms should be legislated in the substantive law and implemented as such.
- African countries' company and financial laws should be reformed to require all extractive companies to use the EITI template in their annual financial reports by law.

Economic development must be complemented by political development and liberalization to attain an amplified effect. The pace of political reforms toward better governance and improved political rights should be accelerated in Africa given that our results have shown that democracy is a useful tool for accelerating gender equality in employment.

In this study, we have shown that with higher female ratios in the population (further reflection of higher population growth), there is urgent need to intensify family planning services efforts and activities in African countries so as to improve knowledge, acceptance and practice (KAP) of family planning. This will involve not only increased financial outlay but also research on fertility determinants as well as decentralized planning, delivery and supervision of family planning services (Anyanwu *et al.*, 1998a, b).

A key question one might ask is: how will African countries raise the money that is required to achieve all the above, especially in the face of vanishing foreign aid, lean domestic resources and serious debt crisis in Europe and budget crises in the US? The good news is that a major part of what is required is not money but the political will, commitment, transparency and accountability, collaborative spirit to formulate and faithfully implement the requisite policies, strategies, plans and collective action as well as the institutional changes needed for increased job creation for the youth. Also, African countries need to redouble their efforts to mobilize domestic revenues, which in 2008 represented 10 times the total volume of aid flowing to the continent. To do this, African countries need tax reforms for fair and efficient tax systems, improved tax administration, deepened tax-base, diversified tax mix and encouragement of investment by the private sector, including foreign ones.

In addition, emerging partners like the BRICs are redefining international cooperation, especially with Africa. For example, some emerging partners (China, and to a lesser extent India, Brazil and Turkey) have grown to exert regional and global influence on development cooperation. Apart from increased trade that had hit about US\$150 billion in 2011, it has been estimated that

between 2005 and 2010, about 14 per cent of Chinese overseas investments went to sub-Saharan Africa. Forecasts have it that investments from China into SSA are likely to hit US\$50 billion by 2015, an increase of 70 per cent from 2009. With a large chunk of these investments going to help build roads, rails and ports, through dialogue local youth labor should be used for the execution of those projects instead of importing labor from abroad. Part of those investments could also be tapped for education in entrepreneurship and skills development.

Without doubt, sustainable inclusive growth and development as well as inclusive governance should be the basis for policy-makers and leaders in Africa to bridge the transformation between the pain of the current women unemployment time bomb, especially in North Africa and net oil-exporting countries, and the promise of the future.

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Appendix

Table A1: Description of variables

Variable	Source
Employment ratios	International Labor Organization (ILO) databases, ILO (2012a, b)
Per capita GDP (constant 2000 US dollar)	World Development Indicators
Democracy	Polity IV Project
School enrolment rates	World Development Indicators
Urban population ratio	World Development Indicators
Sex population ratio	World Development Indicators
Domestic investment	World Development Indicators
Foreign direct investment	World Development Indicators